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ANIMAL IDENTIFICATION SYSTEM

Abstract:

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An animal identification device (1) including: (a) a securing portion (3) for securing the device to the animal (2) and (b) one or more removable sections (4), wherein the securing portion (3) and the removable section (4) have related identification information, characterised in that the removable section (4) is configured to receive a sample from an animal (2) or be attached to a sample from an animal (2).

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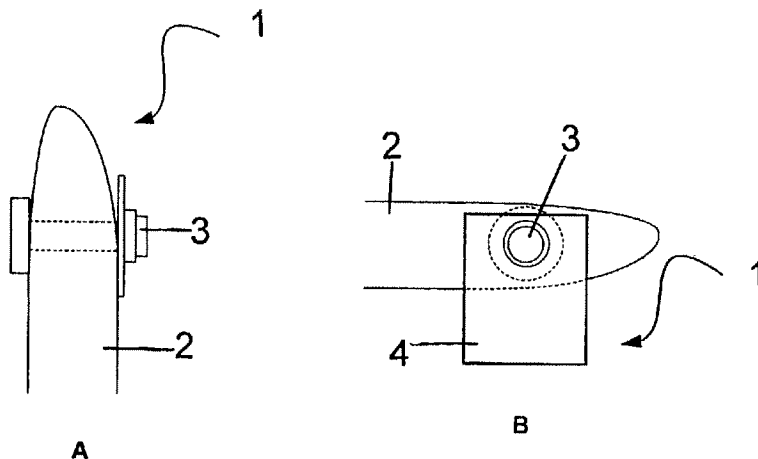
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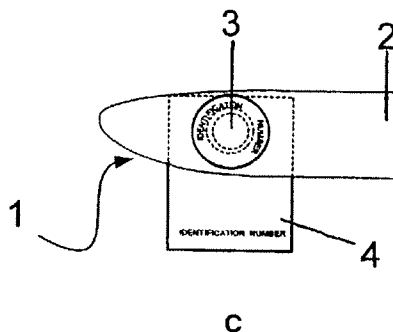
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IMPROVED ANIMAL IDENTIFICATION SYSTEM

TECHNICAL FIELD

This invention relates to an improved animal identification system.

Reference throughout this specification shall now be made to use of the present
5 invention with relation to animals.

However, this should not be seen to be a limitation on the present invention in any way as the present invention may be used in any field where the correct tracing of samples is required, for instance horticulture, apiculture, geology etc.

BACKGROUND ART

10 Animal tags are well known within the field of animal husbandry, the most popular of which are ear tags.

These tags will generally have an individual identification number for each animal within the herd so that accurate records can be kept for each animal.

Whilst there are a considerable number of variations on the basic ear tag, they all
15 generally consist of a section that is passed through a hole in the animal's ear, to which is attached the identification portion.

One improvement over the basic ear tag available was disclosed in NZ Patent No. 225635. This ear tag included a detachable indicia matching section which could be used to assist in filing etc., however this detachable section contained no other
20 information than the identification of the animal from whence it came.

A further improvement over the previous ear tag systems was disclosed in NZ Patent No. 260739 which disclosed an animal ear tag that contained raised projections

which could be selectively removed to convey information about the animal to which it is affixed.

A similar system was disclosed in NZ Patent No. 276156 which discussed a strap which could be securely fastened around an animal's tail or leg and which also
5 contained a number of removable tabs attached to its edges.

The strap is to identify when an animal has been treated with a substance that could contaminate products from the animal, e.g.: cow's milk. The tabs are sequentially removed to denote the time period from which the treatment ceased, in order that it can be accurately determined as to when the products from the animal will no longer
10 be contaminated.

Whilst the ear tag systems available are suitable for general use, they have significant drawbacks when material removed from an animal needs to be correctly identified.

Even the most modern tags available do little more than identify an individual animal within the herd and can in no way, other than having their number recorded against a
15 sample, be used to identify any material removed from the animal.

When dealing with pathogens or disease, it is imperative that any material removed from an animal within a herd is correctly identified so that it can be traced back to the individual animal.

This is even more important in the beef or dairy industry due to the spread of bovine
20 spongiform encephalopathy (BSE) as the incorrect tracing of material from an infected animal could result in an infected animal being shipped to another site or it may even enter the human food chain.

For the determination of the presence of pathogens and/or disease within an animal, it is often necessary to remove samples from the animal, such as blood, hair or tissue in
25 order to determine what is afflicting the particular animal.

In addition to sampling for the purpose of disease surveillance, increasing numbers of animals are being sampled for DNA analysis.

The results of a DNA test may be used to include or exclude animals from the consumer food chain because of their product quality, or public health issues
5 associated with their products.

In some quality assurance schemes DNA of a test sample may be compared to a store of DNA samples from animals raised under a particular regime.

Alternatively rejection of animal products from a consumer market may be based on the presence of a specific gene in an animal, for example, the A1 allele of the beta-
10 casein gene or alleles at the prion protein gene responsible for a greater degree of infectiousness of spongiform encephalopathies.

Therefore the correct identification of which animal a DNA sample is taken from may be critical to the designation of animals and products as “safe” or “unsafe” in a quality assurance programme that ensures the safety of consumer food products.

15 The website www.idplus.com.au describes a tagging system whereby the punch of tissue removed to accommodate the ear tag is driven into a uniquely labelled, detachable collection chamber in the same action that secures the tag to the animal’s ear.

This guarantees that a sample is labelled with indicia related to the indicia on the tag.

20 However, the system has the drawback that animal tagging and DNA sampling must occur at the same time.

Tagging animals is a difficult operation and the mechanics of sampling at the same time as tagging can, in certain instances, make the tagging operation impractical. In addition the system is not suited to taking repeated or additional samples as in each
25 instance another tag would have to be applied.

Therefore, as stated earlier, if this removed material cannot be traced back accurately to the particular animal from which it was taken, then there may be severe consequences.

5 Whilst it is envisaged that if only a small number of animals are being tested then there should not be a problem, it is also accepted that some herds number several hundreds of animals and due to the time constraints placed upon the farmer or vet in which to undertake and record the taking of samples from each animal, then there is a high chance of at least one mistake being made.

10 All references, including any patents or patent applications cited in this specification are hereby incorporated by reference. No admission is made that any reference constitutes prior art. The discussion of the references states what their authors assert, and the applicants reserve the right to challenge the accuracy and pertinency of the cited documents. It will be clearly understood that, although a number of prior art publications are referred to herein, this reference does not constitute an admission
15 that any of these documents form part of the common general knowledge in the art, in New Zealand or in any other country.

It is acknowledged that the term 'comprise' may, under varying jurisdictions, be attributed with either an exclusive or an inclusive meaning. For the purpose of this specification, and unless otherwise noted, the term 'comprise' shall have an inclusive
20 meaning - i.e. that it will be taken to mean an inclusion of not only the listed components it directly references, but also other non-specified components or elements. This rationale will also be used when the term 'comprised' or 'comprising' is used in relation to one or more steps in a method or process.

It is an object of the present invention to address the foregoing problems or at least to
25 provide the public with a useful choice.

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

According to one aspect of the present invention there is provided an animal
5 identification device including,

a securing portion for securing the device to the animal, and

one or more removable sections, wherein

the securing portion and the removable section(s) have related identification information,

10 characterised in that

the removable section is configured to receive a sample from an animal or be attached to a sample from an animal.

It should be understood that throughout the present specification the term “securing portion” should be understood to mean the section of the animal identification device
15 that is securely attached to the animal.

In preferred embodiments of the present invention the securing portion will be an ear tag, however this should not be seen to be a limitation on the present invention as in other embodiments the securing portion could be a leg or tail tag, or maybe any other suitable device that can be securely fastened to an animal.

20 Also throughout the present specification the term “removable section” should be understood to mean a removable portion of the animal identification device that is constructed of a weatherproof material and is located in such a position that it cannot be easily damaged or removed by the animal to which it is attached, although it can

be removed by a person (whilst leaving the securing portion intact and attached to the animal).

It should be further understood that the removable section is constructed as a suitable substrate to which a sample from the animal can be attached.

- 5 In preferred embodiments of the present invention a number of removable sections will be attached to the securing portion in such a manner that an individual removable section can be manually detached by a human when desired.

It should be noted that in preferred embodiments of the present invention the sample from the animal is sandwiched between the removable section and an adhesive
10 overlay.

It should also be noted however that this should in no way be seen to be a limitation on the present invention as in other embodiments the sample can be attached to the removable section in other ways, for instance each removable section may have a surface containing an aggressive adhesive, or the removable sections may even be
15 constructed with a sealable pocket into which a sample can be placed prior to the pocket being sealed.

It should be further understood that within the present specification the term “identification information” should be understood to mean any information that contains a unique animal identification mark.

- 20 In preferred embodiments of the present invention the identification information will be in the form of a barcode, written text, a radio frequency transponder, a combination of these, or any other means of providing a unique identifier for each animal.

According to another aspect of the present invention there is provided an animal
25 identification device including

- a securing portion for securing the device to an animal, and
- one or more removable sections,
- and
- the securing portion and the removable sections having related identification
- 5 information, and
- the removable portion is configured to receive a sample from an animal or be attached to a sample from an animal,
- characterised in that
- the surface of the removable section configured to receive the sample is covered to
- 10 prevent exposure to contaminants.
- According to a further aspect of the present invention there is provided a method of identifying animals, including
- using an animal identification device, including
- a securing portion for securing the device to an animal, and
- 15 one or more removable sections, and
- the securing portion and the removable section(s) having related identification information, and
- the removable section is configured to receive a sample from an animal, or be attached to a sample from an animal, and
- 20 the surface of the removable section that is configured to receive the sample is covered to prevent exposure to contaminants,

characterised by the steps of

- a) uncovering the surface of the removable section that is configured to receive the sample and,
- b) detaching a removable section from the animal identification device,
- 5 c) securely attaching the required sample from the animal to the detached removable section.

Also throughout the present specification the term “cover” should be understood to mean any item that is, or is capable of, covering at least one face of a removable section, in order that no contaminants can come into contact with the face of the
10 removable section.

In preferred embodiments of the present invention the cover will be the securing portion of the animal identification device, or the cover may be part of another removable section.

It should be further understood that in some embodiments of the present invention
15 the cover may be an item that protects an adhesive surface on the removable section portion so that the adhesive does not stick to the animal or the tag.

Once the removable section is removed from the tag, the cover can be removed and the adhesive surface used to attach the removable section of the tag to the sample or to a container in which the sample is placed.

20 In some preferred embodiments of the present invention the removable sections are affixed to the securing portion in a stack format so that when a removable section is removed the removable section immediately below it will become exposed so that it can be removed the next time a removable section is required.

It should be understood that in other preferred embodiments of the present invention one or more removable sections can be affixed directly to the securing portion.

It should be further understood that in other embodiments of the present invention the cover may be any item capable of ensuring that at least one portion of a removable
5 section is not exposed to contaminants until the cover is removed.

It should be apparent by now that the present invention has a number of advantages over the prior art.

The present invention provides an easy means by which material removed from an animal can be readily identified. This material could also be used in the tracing of
10 individual animals.

By having a unique identifier on the animal and on the sample area, traceability can be assured.

BRIEF DESCRIPTION OF DRAWINGS

Further aspects of the present invention will become apparent from the following
15 description which is given by way of example only and with reference to the accompanying drawings in which:

Figure 1 shows one embodiment of the present invention in use.

Figures 1A, 1B and 1C all show alternate views of an ear tag generally indicated by arrow 1 connected to the ear 2 of an animal.

BEST MODES FOR CARRYING OUT THE INVENTION

20 The tag 1 has a securing portion 3 which acts to hold the tag 1 to the ear 2. The securing portion 3 actually comes in two parts which are joined together with an

applicator which causes one part to pass through the ear 2 of the animal and into the other part.

The securing portion 3 has an identification number (or barcode or other ID mark) printed or engraved upon it.

- 5 The tag 1 also has a removable portion 4. The removable portion 4 also has an identification number on it which is identical to or associated with the number on the securing portion 3 in an electronic database.

It can be seen that the removable portion 4 has a sufficient surface area onto which a sample from the animal can be placed. In preferred embodiments, this area includes
10 a cover which can sandwich the sample to the tag.

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope of the appended claims.

WHAT I/WE CLAIM IS:

1. An animal identification device, including

a securing portion for securing the device to the animal, and

one or more removable sections, wherein

5 the securing portion and the removable section(s) have related identification information,

characterised in that

the removable section is configured to receive a sample from an animal or be attached to a sample from an animal.
- 10 2. An animal identification device as claimed in claim 1 wherein the securing portion is an ear tag.
3. An animal identification device as claimed in either claim 1 or claim 2 wherein the removable section is constructed of a weatherproof material.
4. An animal identification device as claimed in any previous claim wherein the
15 removable section can be removed whilst leaving the securing portion intact and attached to the animal.
5. An animal identification device as claimed in any previous claim wherein the securing portion is connected to a plurality of removable sections.
6. An animal identification device as claimed in any previous claim wherein a
20 sample required from an animal is sandwiched between the removable section and an adhesive overlay.

7. An animal identification device as claimed in any one of claims 1 to claim 5 wherein the sample from an animal is attached to the removable section by the use of an aggressive adhesive.
8. An animal identification device as claimed in any one of claims 1 to claim 5 wherein the removable section is constructed with a sealable pocket into which a sample from an animal can be placed prior to the pocket being sealed.
9. An animal identification device, including
a securing portion for securing the device to the animal, and
one or more removable sections, wherein
10 the securing portion and the removable section(s) have related identification information, and
the removable section is configured to receive a sample from an animal, or be attached to a sample from an animal.
10. An animal identification device as claimed in claim 9 wherein the cover is
15 capable of covering at least one face of removable section.
11. An animal identification device as claimed in either claim 9 or claim 10 wherein the cover is configured as part of the securing portion.
12. An animal identification device as claimed in either claim 9 or claim 10 wherein the cover of one removable section is constructed as part of another
20 removable section.
13. A method of identifying animals by using an animal identification device, including
a securing portion for securing the device to an animal, and

one or more removable sections, and

the securing portion and the removable section(s) having related identification information, wherein

5 the removable section is configured to receive a sample from an animal or be attached to a sample from an animal, and

the surface of the removable section that is configured to receive the sample is covered to prevent exposure to contaminants,

characterised by the steps of,

- 10 a) uncovering the surface of the removable section that is configured to receive the sample, and
- b) detaching a removable section from the animal identification device, and
- c) securely attaching the required sample from the animal to the detached removable section.

14. An animal identification device substantially as herein described, with
15 reference to and as illustrated by the accompanying drawings.

15. A method of identifying animals substantially as herein described, with reference to and as illustrated by the accompanying drawings.

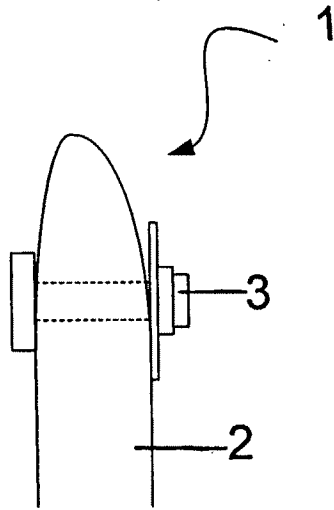


Fig 1A

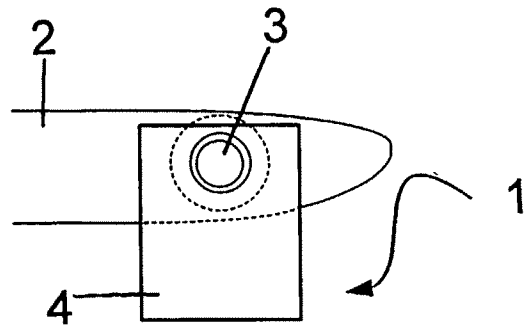


Fig 1B

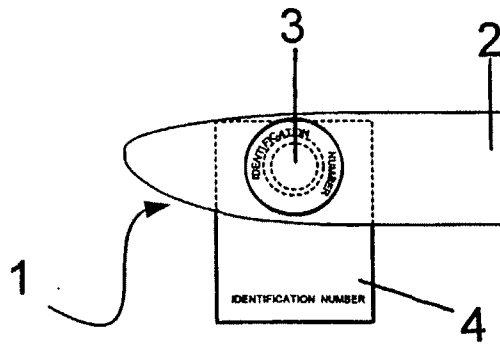


Fig 1C

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ02/00114

A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. ⁷ : A01K 11/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DWPI, US, EP databases with keywords [eg A01K (all), G09F 3 (all), A22B (all), animal, tag, remove]		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AU 20852/70 (458245) B (COOPER, McDOUGALL & ROBERTSON LIMITED) 13 April 1972 Entire document	1-5, 9-12, 14
X	US 6095915 A (GEISLER et al) 1 August 2000 Entire document	1-5, 9-12, 14
X	US 4694781 A (HOWE et al) 22 September 1987 Figures 1-4	1-12, 14
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>		
Date of the actual completion of the international search 9 August 2002		Date of mailing of the international search report 19 AUG 2002
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer A. SEN Telephone No : (02) 6283 2158

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International application No.

PCT/NZ02/00114

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1060662 A (PRAGMATIC NETWORK CREATIONS ETS et al) 20 December 2000 Entire document	1-5, 8-11, 14
P, X	WO 01/87054 A (UNIVERSIDAD DE OVIEDO et al) 22 November 2001 Entire document	1-5, 9-11, 14

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/NZ02/00114

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member
US	6095915	NONE
US	4694781	NONE
EP	1060662	NONE
WO	01/87054	AU 56365/01
		END OF ANNEX